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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,265	07/30/2003	Michael Mallary	Q01-1082-US1	3728
20792	7590	02/21/2006	EXAMINER	
MYERS BIGEL SIBLEY & SAJOVEC			KIM, PAUL D	
PO BOX 37428			ART UNIT	
RALEIGH, NC 27627			PAPER NUMBER	
			3729	

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/630,265	Applicant(s) MALLARY, MICHAEL	
	Examiner Paul D. Kim	Art Unit 3729	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-47 is/are pending in the application.
- 4a) Of the above claim(s) 22,31-40 and 43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-30,41,42 and 44-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                        |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

### **DETAILED ACTION**

This office action is a response to the restriction requirement filed on 1/24/2006.

#### ***Response to the Election of Species***

1. Applicant's election of Species A, claims 23-30, 41, 42 and 44-47, in the reply filed on 1/24/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 22, 31-40 and 43 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/24/2005.
3. During a telephone conversation with Mr. Purks on February 2006 a provisional election was made to prosecute the invention of Species A, claims 23-30, 41, 42 and 44-47. Affirmation of this election must be made by applicant in replying to this Office action. Claims 22, 31-40 and 43 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

#### ***Drawings***

4. The drawings were received on 12/23/2003. These drawings are accepted.

***Claim Objections***

5. Claims 23-30, 41, 42 and 44-47 are objected to because of the following informalities:

Re. Claim 23: The phrase "the first disk contact and the second disk contact" as recited in line 9 appears to be --a first disk contact and a second disk contact--.

The phrase "one or more disks" as recited in line 11 appears to be --two or more disks--. Appropriate correction is required.

Re. Claim 30: The phrase "disk" as recited in line 3 appears to be --two or more disks--.

The phrase "an inner diameter surface" as recited in line 4 appears to be --the inner diameter surface--.

Re. Claim 47: The phrase "disk" as recited in line 3 appears to be --two or more disks--.

The phrase "an inner diameter surface" as recited in line 4 appears to be --the inner diameter surface--.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 30 and 47 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "a radial distance from a central longitudinal axis of the spindle to the lateral spacing point of contact of each of the lateral protrusions is approximately equal to a radial distance from a central longitudinal axis of the disk to an inner diameter surface of the disk" renders the claims vague and indefinite. According to the claim 23, a side of the spindle is biasing so that the outer diameter of the spindle contacts the inner diameter surface of the disk. What it means that the radial distance from the central longitudinal axis of the spindle to the lateral spacing point of contact of each of the lateral protrusions is not equal to the radial distance from the central longitudinal axis of the disk to then inner diameter surface of the disk. Clarification is required.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 23-30, 41 and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakubo et al. (US PAT. 5,548,454) in view of Ridinger et al. (US PAT. 5,333,080).

Kawakubo et al. teach a process of making a disk drive comprising steps of: providing a spindle having an outer diameter (40); mounting on a spindle two or more disks having an inner opening with a given inner diameter (30) slightly larger than the outer diameter of the spindle as shown in Fig. 5; and concentrically aligning the disks in

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relation to the spindle using later protrusions defining as a first disk contact and a second disk contact (either 31, 32, 33, 34 as shown in Fig. 5) at least two lateral spacing points of contacts and biasing a side of the spindle toward a corresponding part of an inner diameter of two or more disks, whereby the outer diameter of the spindle and the inner diameter of the disks contacts each other at the two lateral spacing points (31a, 32b) of contacts as shown in Fig. 5 (see also col. 8, line 64 to col. 10, line 9).

As per claim 24 the spindle is cylindrical as shown in Figs. 5, 8(a) and 8(b).

As per claims 27 and 44 two lateral protrusions (31, 32) are protruding radially outwardly and extending longitudinally along the outer surface of the spindle, apex portions of the lateral protrusions defining the two lateral spacing points (31a, 32b) of contact as shown in Fig. 5.

As per claims 29 and 46 an angle between two lateral protrusions is from  $60^{\circ}$  to  $150^{\circ}$ .

As per claims 30 and 47 a radial distance from a central longitudinal axis of the spindle to the lateral spacing point of contact of each of the lateral protrusions is approximately equal to a radial distance from a central longitudinal axis of the disk to an inner diameter surface of the disk as shown in Figs. 5 and 8 (a).

As per claims 28 and 45, according to the Figs. 8 (a) and (b), the angle between two lateral protrusions (84, 87) is  $120^{\circ}$ .

As per claim 41 the spindle is hold at the right angle as shown in Figs. 8 (b) and 10.

Kawakubo et al. teach all of the limitations as set forth above except the sleeve having an inner diameter is slightly larger than the outer diameter of the spindle.

Ridinger et al. teach a process of making a disk drive having sleeves (44) in ring shape (as per claim 26) and having an inner diameter slightly larger than the outer diameter of the spindle (38) (as per claim 25) between a plurality of disks (8) in order to separate the disks in the disk drive as shown in Fig. 5. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating a disk drive of Kawakubo et al. by sleeves located in between the disks as taught by Ridinger et al. in order to separate the disks in the disk drive.

10. Claim 42 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakubo et al. in view of Ridinger et al., further in view of Johnson (US PAT. 5,101,306).

Kawakubo et al., modified by Ridinger et al., teach all of the limitations as set forth above except to hold the spindle in the angle of 45 degrees. According to Figs. 8 (b) and 10 of Kawakubo et al., the spindle seems to be hold horizontally. However, Kawakubo et al. fail to teach the angle when the biasing is performing. Johnson teaches a fixture to be installed the disk pack to the spindle hub. The fixture including a clamp has a plate form having an angle about 45 degrees relative to the horizontal as shown in Figs. 10 and 11. The clamp of the fixture is provided clamping force in order to balance the disk pack (see col. 4, line 59 to col. 6, line 4). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating a disk drive of Kawakubo et al., modified by Ridinger et

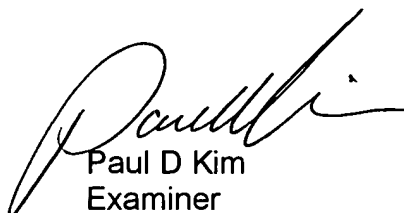
al., by the fixture with a clamp in an angle of 45 degree relative to the horizontal as taught by Johnson in order to balance the disk pack.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Friday between 6:00 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Paul D Kim  
Examiner  
Art Unit 3729